January 4, 2001

MEMORANDUM

TO: Orville D. Green
Administrator
State Air Quality Program

FROM: Gary Gates
Air Quality Analyst
State Technical Services Office

THROUGH: Daniel Salgado
Lead, Process Engineering
State Technical Services Office

SUBJECT: Technical Analysis for Final Tier I Operating Permit (#045-00004)
Northwest Pipeline Corporation; Caldwell, Idaho

PERMITTEE:	Northwest Pipeline Corporation 295 Chipeta Way Salt Lake City, Utah 84158
PERMIT NO:	045-00004
STANDARD INDUSTRIAL CLASSIFICATION	4922
DESCRIPTION:	Natural Gas Compressor Station
KIND OF PRODUCTS:	Natural Gas Transmission
RESPONSIBLE OFFICIAL:	Michael Falk; Director, Operations
PERSON TO CONTACT:	Kirt Rhoads; Senior Environmental Specialist
TELEPHONE NO:	(801) 584-6763
# OF FULL-TIME EMPLOYEES:	0
AREA OF OPERATION:	40 acres
FACILITY CLASSIFICATION:	A
COUNTY:	Gem
AIR QUALITY CONTROL REGION:	064
UTM COORDINATES:	524.9, 4850.8
EXACT PLANT LOCATION:	Section 34, T-6-N, R-3-W

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LIST OF ACRONYMS

ACFM	Actual Cubic Feet per Minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DEQ	Department of Environmental Quality
dscf	Dry Standard Cubic Feet
EF	Emission Factor
EPA	United States Environmental Protection Agency
ESD	Emergency Shutdown
ft^3/hr	Cubic Feet per Hour
gpm	Gallons per Minute
gr	Grain
HAPs	Hazardous Air Pollutants
hp	Horsepower
IC	Integrated Chip
IDAPA	Idaho Administrative Procedures Act
km	Kilometer
lb/hr	Pound per Hour
MACT	Maximum Achievable Control Technology
μg	Micrograms
μm	Micrometers
MMBTU	Million British Thermal Unit
$MMft^3$	Million Cubic Feet
NESHAP	National Emission Standards for Hazardous Air Pollutants
NWP	Northwest Pipeline Corporation
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards
O_3	Ozone
OAQ	Office of Air Quality
OP	Operating Permit
PM	Particulate Matter
PM_{10}	Particulate Matter with an Aerodynamic Diameter of 10 Micrometer (μm) or Less
ppm	Parts per Million
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
RMP	Risk Management Plan
SCC	Source Classification Code
scf	Standard Cubic Foot
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TSP	Total Suspended Particulates
T/yr	Tons per Year (1 Ton = 2000 lb)
VE	Visible Emissions
VOC	Volatile Organic Compound

1. PURPOSE

The purpose of this memorandum is to set out the legal and factual basis for this final Tier I Operating Permit (OP) in accordance with IDAPA 58.01.01.362, *Rules for the Control of Air Pollution in Idaho* (*Rules*).

Idaho Department of Environmental Quality (DEQ) staff have reviewed the information provided by Northwest Pipeline Corporation (NWP) regarding the operation of their facility in Caldwell, Idaho. This information was submitted based on the requirements of the Tier I OP in accordance with IDAPA 58.01.01.300 of the *Rules*.

Based on the information submitted, the DEQ has drafted a Tier I OP for NWP. The permit has been submitted for public comment. The proposed permit has been forwarded to the United States Environmental Protection Agency (EPA) for their review in accordance with IDAPA 58.01.01.366.

2. SUMMARY OF EVENTS

On June 8, 1995, DEQ received the Tier I OP application from NWP for their Caldwell Compressor Station. The application was prepared by Foster Wheeler Environmental Corporation, the facility's consulting firm. The application was determined to be administratively complete on August 8, 1995. The draft Tier I operating permit and technical memorandum underwent public comment from September 22, 1999 to October 22, 1999. The proposed permit was submitted to EPA for their 45-day review from October 11, 2000 to November 24, 2000. EPA had no objections with regard to the terms and conditions of the permit.

3. BASIS OF THE ANALYSIS

The following documents were relied upon in preparing this memorandum and the Tier I OP:

a. Tier I Air Operating Permit Application, (June 8, 1995, Northwest Pipeline Corporation; Salt Lake City, Utah; prepared by Foster Wheeler Environmental Corporation);

b. Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, January 1995, Office of Air Quality Planning and Standards, United States Environmental Protection Agency;

c. 40 CFR Part 70;

d. Guidance developed by EPA and DEQ;

e. Title V permits issued by other jurisdictions; and

f. Documents and procedures developed in the Title V Pilot Operating Permit program.

4. REGULATORY ANALYSIS - GENERAL FACILITY

4.1 Facility Description

4.1.1 General Process Description

The Caldwell Compressor Station operates remotely from NWP's headquarters, located in Salt Lake City, and is used to transmit natural gas along NWP's natural gas transmission pipeline. The station is operated to meet the demand of the pipeline system rather than a fixed schedule. The arrangement of pipes and valves in the Caldwell pipe yard allows natural gas to be transmitted in either direction.

Natural gas entering the station passes through an in-line filter that removes any impurities from the gas stream. The natural gas is compressed through the compressor and is returned to the transmission pipeline. Fuel for the reciprocating engines and other natural gas combustion equipment enters the station in a separate pipeline that originates in the pipe yard downstream of the filter. Fuel gas is lowered from the pipeline pressures to pressures appropriate for the reciprocating engines in the fuel meter building. From the fuel meter building, natural gas is transported to the reciprocating engines, the boiler, the space heaters, and the backup generator. The reciprocating engines, boiler, and backup generator have their own exhaust stacks.

Lubricating oil is stored in a storage tank from which it flows by gravity on demand to a storage tank in the compressor building. When the engine is running, lubricating oil circulates through the engine. The hydraulic oil is pumped to a fan-assisted cooler located inside the compressor building. Oil that may leak from the hydraulic oil system is captured by a drainage system and conveyed to a sump. From the sump, the used oil is pumped to the used-oil tank where it is sent for recycling.

There is no glycol dehydration unit at this facility. The facility is not subject to the Natural Gas Transmission MACT in 40 CFR Part 63 Subpart HH.

The emissions from the Caldwell Compressor Station are largely the result of natural gas combustion. In addition, there are small amounts of emissions from various other sources. Appendix A provides detailed emission estimates from the facility. The principal pollutants of concern are NO_x and VOC.

The hazardous air pollutants (HAPs) emanating from the facility are mostly from the reciprocating engines in the form of organic and inorganic compounds. The emissions are listed in Appendix A. As the facility emits more than ten (10) tons per year of formaldehyde, it is a major source of HAPs.

4.1.2 Facility Classification

The facility is a natural gas compressor station, SIC 4922.

4.1.3 Area Classification

The facility is located just outside of Caldwell, Idaho, which is classified as attainment or unclassifiable for all federal and state criteria pollutants (i.e., SO_2, NO_x, CO, PM_{10}, ozone, fluorides, and lead). There are no Class I areas within ten (10) kilometers (km) of the facility. The Caldwell facility is located in AQCR 64 and UTM Zone 11.

4.1.4 Permitting History

Northwest Pipeline Corporation was issued a Permit to Construct on September 9, 1996, for a GMWH-8 reciprocating engine at the Caldwell Compressor Station. The permit was amended on November 22, 1996.

4.2 Facility-wide Applicable Requirements

4.2.1 Fugitive Particulate Matter - IDAPA 58.01.01.650-651

4.2.1.(a) Requirement

Facility-wide Condition A.1 states that, all reasonable precautions shall be taken to prevent particulate matter from becoming airborne in accordance with IDAPA 58.01.01.650-651.

4.2.1.(b) Compliance Demonstration

Facility-wide Condition A.2 states that the permittee is required to monitor and record the frequency and the methods used by the facility to reasonably control fugitive particulate emissions. IDAPA 58.01.01.651 gives some examples of ways to reasonably control fugitive emissions which include, use of water or chemicals, application of dust suppressants, use of control equipment, covering of trucks, paving of roads or parking areas, and removal of materials from streets.

Facility-wide Condition A.3 requires that the permittee maintain records of all fugitive dust complaints received. In addition the permittee is required to take appropriate corrective action as expeditiously as practicable after a valid complaint is received. The permittee is also required to maintain records which shall include the date that each complaint was received and a description of the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken and the date the corrective action was taken.

To ensure that the methods being used by the permittee to reasonably control fugitive particulate matter emissions, whether or not a complaint is received, Facility-wide Condition A.4 requires that the permittee conduct quarterly inspections of the facility. The

facility has minimal vehicle traffic and only one road into the facility; therefore, quarterly inspections will be sufficient. The permittee is required to inspect potential sources of fugitive emissions during daylight hours and under normal operating conditions. If the permittee determines that the fugitive emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee is also required to maintain records of the results of each fugitive emission inspection.

Both Facility-wide Conditions A.3 and A.4 require the permittee to take corrective action as expeditiously as practicable. In general, the Department believes that taking corrective action within twenty-four hours of receiving a valid complaint or determining that fugitive particulate emissions are not being reasonably controlled meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

4.2.2 Control of Odors - IDAPA 58.01.01.775-776

4.2.2.(a) Requirement

Facility-wide Condition A.5 and IDAPA 58.01.01.776 both state that: *"No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids to the atmosphere in such quantities as to cause air pollution."* This condition is currently considered federally enforceable until such time it is removed from the SIP, at which time it will be a state-only enforceable requirement.

4.2.2.(b) Compliance Demonstration

Facility-wide Condition A.6 requires the permittee to maintain records of all odor complaints received. If the complaint has merit, the permittee is required to take appropriate corrective action as expeditiously as practicable. The record is required to contain the date that each complaint was received and a description of the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

Facility-wide Condition A.6 requires the permittee to take corrective action as expeditiously as practicable. In general, the Department believes that taking corrective action within twenty-four hours of receiving a valid odor complaint meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

4.2.3 Visible Emissions - IDAPA 58.01.01.625

4.2.3.(a) Requirement

IDAPA 58.01.01.625 and Facility-wide Condition A.7 state that *"(No) person shall discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period which is greater than twenty percent (20%) opacity as determined . . ."* by IDAPA 58.01.01.625. This provision does not apply when the presence of uncombined water, nitrogen oxides, and/or chlorine gas are the only reason(s) for the failure of the emission to comply with the requirements of this rule.

4.2.3.(b) Compliance Demonstration

To ensure reasonable compliance with the visible emission rule, Facility-wide Condition A.8 requires that the permittee conduct quarterly visible emissions inspections of the facility. The facility uses exclusively natural gas with no visible emissions expected; therefore, quarterly monitoring is sufficient. The permittee is required to inspect potential sources of visible emissions, during daylight hours and under normal operating conditions. If any visible emissions are present from any point of emission covered by this section, the permittee must take appropriate corrective action as expeditiously as practicable. If opacity is determined to be greater than twenty percent (20%) for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period, the permittee must take corrective action and report the exceedance in its annual compliance

certification and in accordance with the excess emissions rules in IDAPA 58.01.01.130-136. The permittee is also required to maintain records of the results of each visible emissions inspection which must include the date of each inspection and a description of the permittee's assessment of the conditions existing at the time visible emissions are present, any corrective action taken in response to the visible emissions, and the date corrective action was taken.

It should be noted that if a specific emission unit has a specific compliance demonstration method for visible emissions that differs from Facility-wide Condition A.8, then the specific compliance demonstration method overrides the requirement of Condition A.8. Condition A.8 is intended for small sources that would generally not have any visible emissions.

Facility-wide Condition A.8 requires the permittee to take corrective action as expeditiously as practicable. In general, the Department believes that taking corrective action within twenty-four hours of discovering visible emissions meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

4.2.4 Startup, Shutdown, Scheduled Maintenance, Safety Measures, Upset and Breakdown - IDAPA 58.01.01.130-136

4.2.4.(a) Requirement

Facility-wide Condition A.9 requires that the permittee comply with the requirements of IDAPA 58.01.01.130-136 for startup, shutdown, scheduled maintenance, safety measures, and upset and breakdowns. This section is fairly self explanatory and no additional detail is necessary in this technical analysis. It should, however, be noted that IDAPA 58.01.01.133.02, 133.03, 134.04, and 134.05 are not specifically included in the permit as applicable requirements. These provisions of the *Rules* only apply if the permittee anticipates requesting consideration under IDAPA 58.01.01.131.02 of the *Rules* to allow the Department to determine if an enforcement action to impose penalties is warranted. IDAPA 58.01.01.131.01 states *". . . The owner or operator of a facility or emissions unit generating excess emissions shall comply with Sections 131, 132, 133.01, 134.01, 134.02, 134.03, 135, and 136, as applicable. If the owner or operator anticipates requesting consideration under Subsection 131.02, then the owner or operator shall also comply with the applicable provisions of Subsections 133.02, 133.03, 134.04, and 134.05."* Failure to prepare or file procedures pursuant to IDAPA 58.01.01.133.02 and 134.04 is not a violation of the *Rules* in and of itself, as stated in IDAPA 58.01.01.133.03.a and 134.06.b. Therefore, since the permittee has the option to follow the procedures in IDAPA 58.01.01.133.02, 133.03, 134.04, and 134.05; and is not compelled to, the subsections are not considered applicable requirements for the purpose of this permit and are not included as such.

4.2.4.(b) Compliance Demonstration

The compliance demonstration is contained within the text of Facility-wide Condition A.9. No further clarification is necessary here.

4.2.5 Reporting

4.2.5.(a) Requirement

The permittee is required to submit periodic reports and certifications to the Department at the required times to the appropriate agency as described in Facility-wide Condition A.10.

Sufficient reporting to assure compliance with all of the terms and conditions of the permit. Reports for any required monitoring shall be submitted at least every six (6) months in accordance with IDAPA 58.01.01.322.08.

In accordance with IDAPA 58.01.01.322.08, NWP must report all instances of deviations from permit requirements. Therefore, even if specific monitoring is not required by the permit, the permittee must report any deviations of which he/she is aware.

4.2.5.(b) Compliance Demonstration

The compliance demonstration is contained within the text of Facility-wide Condition A.10. No further clarification is necessary here.

4.2.6 Recordkeeping

4.2.6.(a) Requirement

The permittee is required to maintain sufficient recordkeeping to assure compliance with all of the terms and conditions of the permit as required by IDAPA 58.01.01.322.a and b. In addition, the permittee shall retain records of all monitoring and other requirements in the Tier I OP for the most recent five (5) year period. These records shall be made available to DEQ representatives upon request.

4.2.6.(b) Compliance Demonstration

The compliance demonstration is contained within the text of the Facility-wide Conditions. No further clarification is necessary here.

4.2.7 Chemical Accident Prevention Provisions - 40 CFR Part 68

4.2.7.(a) Requirement

Any facility that has more than a threshold quantity of a regulated substance in a process, as determined under 40 CFR 68.115, must comply with the requirements of the Chemical Accident Prevention Provisions at 40 CFR Part 68 no later than the latest of the following dates:

> Three years after the date on which a regulated substance present above a threshold quantity is first listed under 40 CFR 68.130; or
>
> The date on which a regulated substance is first present above a threshold quantity in a process.

This facility is not currently subject to the requirements of 40 CFR Part 68. However, should the facility ever become subject to the requirements of 40 CFR Part 68 then it must comply with the provisions contained in 40 CFR Part 68 by the time listed above.

4.2.7.(b) Compliance Demonstration

The compliance demonstration is contained within the text of the Facility-wide Conditions. No further clarification is necessary here.

4.2.8 Testing

4.2.8.(a) Requirement

Testing is required in the permit, and all testing must meet the requirements as set forth in Facility-wide Condition A.15. The required testing then must also meet the notification requirements as stated in Facility-wide Condition A.16. NWP has requested that 45 days be allowed for submitting test reports. IDAPA 58.01.01.157 does allow for a permit to specify a time allowed for report submission. NWP contracts one testing company to do all of their testing at one time. Extra time is then needed after performing all testing to draft and submit all of the test reports.

4.2.8.(b) Compliance Demonstration

The compliance demonstration is contained within the text of the Facility-wide Conditions. No further clarification is necessary here.

4.3 Alternative Operating Scenarios

There were no alternative operating scenarios requested by the facility.

4.4 Trading Scenarios

There were no trading scenarios requested by the facility.

4.5 Excess Emissions

NWP did not submit procedures to minimize excess emissions for possible excuses from violation.

5. REGULATORY ANALYSIS - EMISSIONS UNITS

5.1 Cooper-Bessemer Reciprocating Engines

5.1.1 Emission Unit Description

The natural gas compressors are powered by Cooper-Bessemer reciprocating engines. The engines are sources of PM_{10}, SO_2, CO, NO_x, VOCs, and some HAPs. The units 1 through 3 compressors are each powered by Model GMWA-6 engines, each of which are rated at a maximum 1,420 hp at station conditions. Units 1 through 3 were installed when the station was constructed in 1956. Unit 4 consists of a Cooper GMVH-8 reciprocating engine and compressor. The engine was installed in 1981 when the station was upgraded, and it is rated at a maximum of 1,800 hp at station conditions.

The stack parameters for units 1 through 3 of the Cooper reciprocating engines are as follows:

Stack Height:	25.3 feet
Stack Diameter:	1.5 feet
Stack Flowrate:	15,000 ACFM
Stack Temperature:	610°F (average)

The stack parameters for unit 4 of the Cooper reciprocating engines are as follows:

Stack Height:	25.3 feet
Stack Diameter:	1.6 feet
Stack Flowrate:	15,300 ACFM
Stack Temperature:	625°F (average)

5.1.2 Permit Requirement - VISIBLE EMISSIONS - [IDAPA 58.01.01.625]

5.1.2.(a) Applicability

All four Cooper Reciprocating Engines are affected by IDAPA 58.01.01.625 and .675.

5.1.2.(b) Compliance Demonstration Method

Compliance with these standards shall be demonstrated by burning only natural gas in the reciprocating engines. Since combustion of natural gas results in very little particulate matter emissions, DEQ staff do not foresee that normal operations of natural gas combustion will cause a violation of the twenty percent (20%) opacity standard. Section 8.4 of the permit application affirms that the plume opacity from the reciprocating engines is less than two percent while burning natural gas.

5.1.2.(c) Monitoring

As long as natural gas is being burned in the reciprocating engines, no monitoring besides fuel usage is required.

5.1.2.(d) Testing

No testing is required to demonstrate compliance with these requirements.

5.1.2.(e) Recordkeeping

Any records shall be maintained by the permittee for a period of five (5) years. These records shall be made available to DEQ representatives upon request.

5.1.2.(f) Reporting

Pursuant to IDAPA 58.01.01.322.08.b, the permittee is required to submit a report every six (6) months that includes all instances of deviations from the requirements of the permit. The permittee shall submit the initial report six (6) months after issuance of the permit and submit subsequent reports every six (6) months thereafter.

5.1.3 Permit Requirement - FUEL BURNING EQUIPMENT - [IDAPA 58.01.01.675]

5.1.3.(a) Applicability

All four Cooper Reciprocating Engines are affected by IDAPA 58.01.01.675.

5.1.3.(b) Compliance Demonstration Method

Compliance with this standard shall be demonstrated by using the same methods as those stated in 5.1.2.(b) of this memorandum. In addition, at least once during the permit term, the permittee shall conduct a performance test on one of the reciprocating engines to demonstrated compliance with the grain-loading standard.

5.1.3.(c) Monitoring

As long as natural gas is being burned in the reciprocating engines, no monitoring besides fuel usage is required.

5.1.3.(d) Testing

At least once during the permit term, one of the Cooper-Bessemer GMWA-6 Reciprocating engines must be tested to show compliance with the grain-loading limit in Condition B.1 of the permit.

Emission testing methods shall be in accordance with the test methods and procedures in IDAPA 58.01.01.157, and Condition A.15 of this permit.

5.1.3.(e) Recordkeeping

Recordkeeping shall be performed as stated in 5.1.2.(e) of this memorandum.

5.1.3.(f) Reporting

Pursuant to IDAPA 58.01.01.322.08.b, the permittee is required to submit a report every six (6) months that includes all instances of deviations from the requirements of this permit. The permittee shall submit the initial report six (6) months after issuance of the permit and submit subsequent reports every six (6) months thereafter.

6. INSIGNIFICANT ACTIVITIES

There are several sources listed as insignificant at the Caldwell Compressor Station (see application at Section 2.9). These units qualify as insignificant due to the quantity of emissions or to the fact the source itself is specifically listed in IDAPA 58.01.01.317.01.a and/or b. Emission units that are listed as insignificant under IDAPA 58.01.01.317.01.b are listed in the Tier I OP in order to be encompassed by the permit shield. Emission units that were determined insignificant under IDAPA 58.01.01.317.01.a are not listed in the Tier I OP. While there are no

monitoring requirements for insignificant emissions units at this facility, these units must comply with all applicable federal, state, and local requirements.

6.1 Boiler

The 3.6-MMBtu/hour boiler is located in the auxiliary building and exhausts to its own stack which penetrates the roof of the auxiliary building. Operating entirely on natural gas, the boiler is the source of small quantities of PM_{10}, SO_2, CO, NO_X, VOCs, and some HAPs. Emissions from the boiler are considered insignificant in accordance with IDAPA 58.01.01.317.b.i.5 .

6.2 Backup Generator

In the event that electric power to the facility is interrupted, electricity would be generated by a natural gas powered backup generator. About once a month, the generator is automatically tested for about one hour.

The backup generator is driven by a 209-hp engine manufactured by Equipment Associates (Model F1197GU). The engine exhausts to its own stack, which is a 6-inch pipe that penetrates the north wall of the auxiliary building. The backup generator is the source of small quantities of PM_{10}, SO_2, CO, NO_X, VOCs, and some HAPs. Emissions from the backup generator are considered insignificant in accordance with IDAPA 58.01.01.317.b.i.5 .

6.3 Space Heaters

Natural-gas-fueled heaters are located in the compressor building, auxiliary building, shop, and office buildings. The heater in the compressor building is located next to Unit 4 and is used to keep the lubricating oil pump warm. All five space heaters at the station are individually rated at, or less than, 60,750 Btu/hour. Emissions from the space heaters are considered insignificant in accordance with IDAPA 58.01.01.317.b.i.5 .

6.4 Lubricating Oil System

The lubricating oil system for the reciprocating engine compressors consists of a 277-bbl storage tank, the circulation system, a used-oil collection system, and a used-oil tank. All tanks are vented to the atmosphere.

The lubricating oil system is a source of a small amount of VOC emissions. Emissions from the lubricating system are considered insignificant in accordance with IDAPA 58.01.01.317.a.i.4 .

6.5 Used-Oil Tanks

Lubricating oil leaking from valves, flanges, and other connections is collected in a drain system and conveyed to a sump located outside the auxiliary building. Oil and water collected in the sump are pumped to the 70-bbl used-oil tank. Natural gas on its way to either of the compressors passes through a filter. Liquid material collected by the in-line filter is pumped to the 100-bbl used-oil tank.

The valves, flanges, and relief vents that comprise the sump and the used-oil tanks are a source of VOC emissions. Each used-oil tank contains one relief vent. The relief vent on the 100-bbl tank includes a vapor recovery device. Emissions from the used-oil tanks are considered insignificant in accordance with IDAPA 58.01.01.317.a.i.4 .

6.6 Natural Gas Pipeline and Fuel System

Natural gas contains some non-methane hydrocarbons. Both methane (methane and ethane) and VOCs would be emitted to the atmosphere from leaking valves, flanges, and pressure relief valves. The flanges, valves, and pressure relief valves that comprise the natural gas conveyance system in the pipe yard, as well as the fuel gas system, are sources of methane/ethane and VOC fugitive emissions.

Annually, the Emergency Shutdown (ESD) system at the Caldwell station is tested. The ESD system is designed to shut down the station and vent all of the natural gas in the pipes in the event of an emergency. Maintenance performed on pipes that transmit natural gas require that material in the pipes first be vented. The vented natural gas, or blowdown, is another source of methane and VOC emissions.

The piping used to convey natural gas to and from the compressors includes valves, flanges, compressor seals, and pressure relief valves. A separate system brings fuel gas to the reciprocating engines and other natural gas combustion equipment. Emissions are based on EPA emission factors for compressor seals, in-line valves, pressure relief valves, and flanges, and the number of each of these items in the system. Emissions from the natural gas pipeline and fuel system are considered insignificant in accordance with IDAPA 58.01.01.317.b.i.30 .

6.7 Fugitive Sources

The emission factors from EPA's AP-42, Fifth Edition (1995), Section 13.2.2 were used to determine the PM_{10} emissions from vehicles operated on gravel roads at the site. Emissions from fugitive sources are considered insignificant in accordance with IDAPA 58.01.01.317.b.i.30.

7. COMPLIANCE PLAN AND COMPLIANCE CERTIFICATION

7.1 Compliance Plan

NWP has submitted a compliance plan indicating that all emission units are in compliance and will continue to comply with the terms and conditions of IDAPA 58.01.01.314.11. In addition, if there are additional terms or conditions applicable to the source, NWP will meet the terms and conditions on a timely basis as required by DEQ.

7.2 Compliance Certification

NWP shall submit a periodic compliance certification for each emissions unit in the form of annual report to DEQ and EPA within thirty (30) days after the end of each calendar year. The basic compliance requirements of each emissions unit are fuel usage, visible emission standard, and fugitive emissions in accordance with IDAPA 58.01.01.314.10.

7.3 Compliance Inspection

The facility may be inspected at least annually by DEQ. Copies of the annual inspection reports are located in the source file at DEQ's office in Boise, Idaho.

8. AIRS DATABASE

There are no new emission sources associated with this permit. All units have been registered into the AIRS database.

9. REGISTRATION FEES

IDAPA 58.01.01.525 applies to this facility. Northwest Pipeline Corporation shall determine annual emissions in a manner consistent with IDAPA 58.01.01.525 for the purposes of registration fees.

10. RECOMMENDATIONS

Based on the Tier I OP application and review of the federal regulations and state rules, staff recommends that DEQ issue a Tier I OP for Northwest Pipeline Corporation's Caldwell Compressor Station located in Caldwell, Idaho.

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Attachments

cc: Boise Regional Office
DEQ State Office
L. Kral, EPA Region X

APPENDIX A

NORTHWEST PIPELINE CORPORATION

CALDWELL COMPRESSOR STATION

POINT SOURCE HOURLY (lb/hr) AND ANNUAL (T/yr) EMISSION ESTIMATES[a]

Source	PM_{10}		CO		NO_X		SO_2		VOC	
	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)
Reciprocating Engine, Unit 1	0.11	0.49	3.19	14.0	63.9	280	0.064	0.28	9.58	42.0
Reciprocating Engine, Unit 2	0.11	0.49	3.19	14.0	63.9	280	0.064	0.28	9.58	42.0
Reciprocating Engine, Unit 3	0.11	0.49	3.19	14.0	63.9	280	0.064	0.28	9.58	42.0
Reciprocating Engine, Unit 4	0.16	0.42	4.60	12.4	92.0	248	0.089	0.24	13.8	37.3
TOTAL	0.49	1.89	14.2	54.4	284	1088	0.28	1.08	42.5	163

[a] As determined by DEQ's emission estimation methods.

NORTHWEST PIPELINE CORPORATION

HAZARDOUS AIR POLLUTANTS SOURCE

ANNUAL (T/yr) EMISSION ESTIMATES*

Hazardous Air Pollutant	Reciprocating Engine, Unit 1	Reciprocating Engine, Unit 2	Reciprocating Engine, Unit 3	Reciprocating Engine, Unit 4	Total
	(T/yr)	(T/yr)	(T/yr)	(T/yr)	(T/yr)
Benzene	6.57E-02	6.57E-02	6.57E-02	5.60E-02	0.25
Formaldehyde	2.80	2.80	2.80	2.48	10.9
Toluene	6.57E-02	6.57E-02	6.57E-02	5.60E-02	0.25
Ethylbenzene	3.29E-02	3.29E-02	3.29E-02	2.80E-02	0.13
Xylenes	9.86E-02	9.86E-02	9.86E-02	8.39E-02	0.38
Acetaldehyde	4.72E-04	4.72E-04	4.72E-04	4.01E-04	1.82E-03

* As determined by DEQ's emission estimation methods.